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Samsung Electronics America

Samsung Tech Talk

Your source for service information

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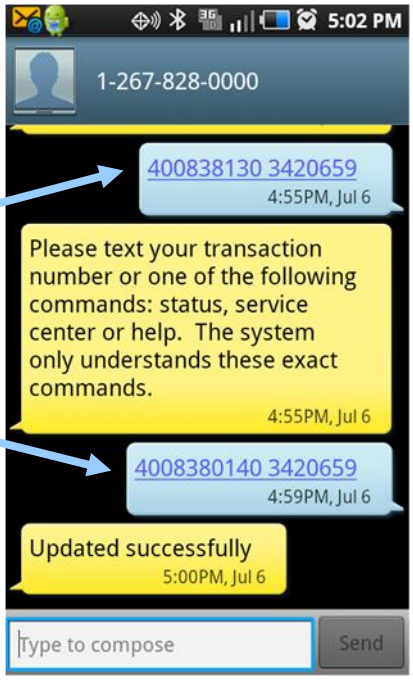
Reduce Long Term Pending Using the Texting App

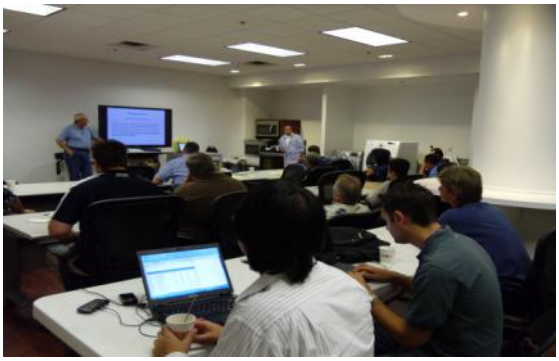
Juan Morales
Regional Trainer

- Long Term Pending (LTP) is calculated by dividing the number of your repairs that remain open more than 7 days by your total number of service tickets.
- LTP is measured from the date a customer calls our call center until the date a customer repair is completed on GSPN!
- This calculation includes weekends, holidays, ASC off days, etc.
- Leaving a ticket open after a repair is complete may affect your LTP.
- Samsung has created a tool to help you complete a call via text message.
- After a service call is completed, you now have the option to simply send a text message to close a repair and within a minute, you'll have an "Updated successfully" text indicating that the call is closed.
- Send the text to phone number, 1-267-828-0000.
- The text **MUST** contain: the 10 digit ticket number, a space, and then your 7 digit account number. For example: 4008380140 3420659.
- The example at the top of the illustration to the right shows a ticket incorrectly submitted @ 4:55 PM - there are only 9 digits in the ticket number - and the response received @ 4:55 PM
- Shown below the incorrect submission is the correct submission @ 4:59 and the "Updated successfully" response received @ 5:00 PM.


5:02 PM
1-267-828-0000
400838130 3420659
4:55PM, Jul 6
Please text your transaction number or one of the following commands: status, service center or help. The system only understands these exact commands.
4:55PM, Jul 6
4008380140 3420659
4:59PM, Jul 6
Updated successfully
5:00PM, Jul 6
Type to compose
Send

2012 RTC TV Training

Samsung Training 2012



For 2012, Samsung introduces a new way of training. To help you with your demanding schedule, updated training on new 2012 TV products will be one day long. To be eligible to attend the one day training session, techs must have attended and successfully completed 2011 TV product training in one of our training centers.

Samsung will still hold 3 day Basic classes quarterly. These classes are intended for new techs who have never attended a Samsung training, or for techs who need extra help to improve their skills.

Attend the in-depth, hands-on 1 day Update or 3 day Basic training at one of our RTCs!

You can reserve your seat in training by emailing training@sea.samsung.com.

You can always obtain the most up to date training list by sending an email to training@sea.samsung.com.

Additionally, TV training is available on-demand 24/7 at https://my.plus1solutions.net/clientPortals/samsung/.

Training Schedule:

Date	City	Comments
December 4, 2012	Bensenville, IL	FE/ASC 1 day Update Training (Session 1)
December 5, 2012	Bensenville, IL	FE/ASC 1 day Update Training (Session 2)
December 6, 2012	Bensenville, IL	FE/ASC 1 day Update Training (Session 3)
December 7, 2012	Bensenville, IL	FE/ASC 1 day Update Training (Session 4)
December 18, 2012	Little Ferry, NJ	FE/ASC 1 day Update Training (Session 1)
December 19, 2012	Little Ferry, NJ	FE/ASC 1 day Update Training (Session 2)
December 20, 2012	Little Ferry, NJ	FE/ASC 1 day Update Training (Session 3)
December 21, 2012	Little Ferry, NJ	FE/ASC 1 day Update Training (Session 4)

2012 RTC TV Training

continued

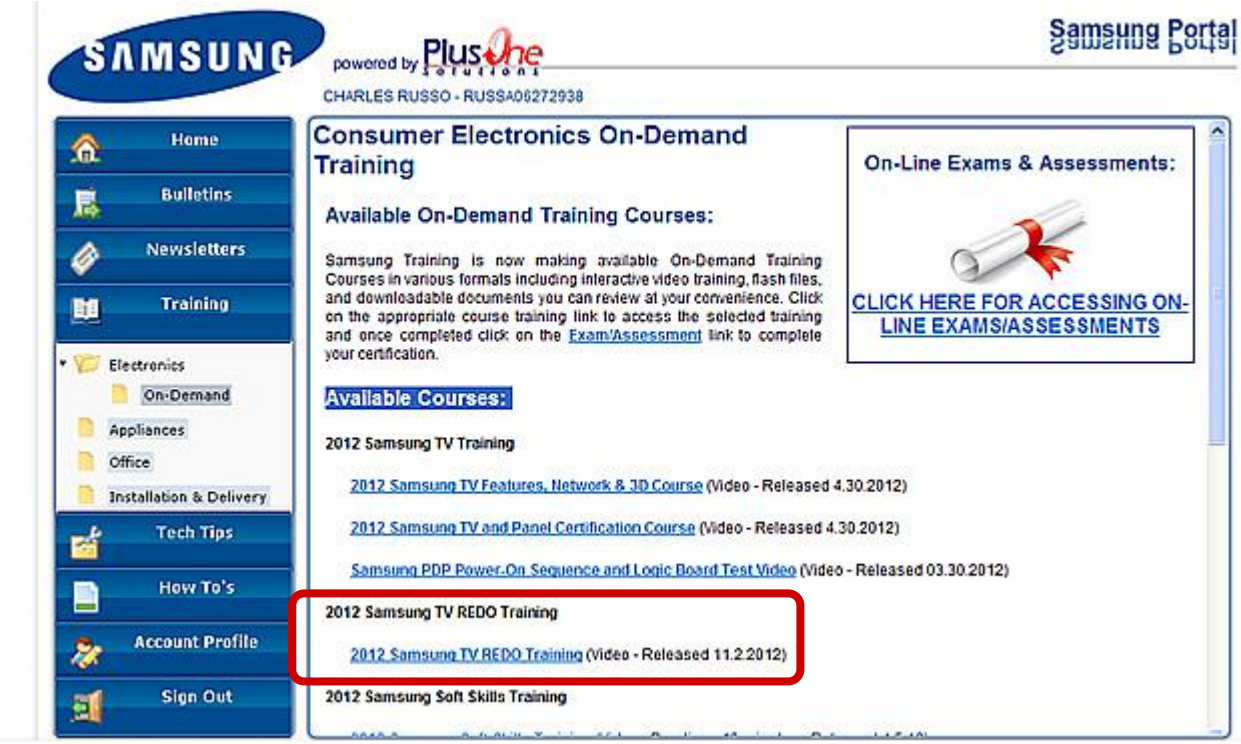
Date	City	Comments
January 8, 2013	Bensenville, IL	FE/ASC 1 day Update Training (Session 1)
January 9, 2013	Bensenville, IL	FE/ASC 1 day Update Training (Session 2)
January 10, 2013	Bensenville, IL	FE/ASC 1 day Update Training (Session 3)
January 11, 2013	Bensenville, IL	FE/ASC 1 day Update Training (Session 4)
January 22, 2013	Little Ferry, NJ	FE/ASC 1 day Update Training (Session 1)
January 23, 2013	Little Ferry, NJ	FE/ASC 1 day Update Training (Session 2)
January 24, 2013	Little Ferry, NJ	FE/ASC 1 day Update Training (Session 3)
January 25, 2013	Little Ferry, NJ	FE/ASC 1 day Update Training (Session 4)

New 2012 Samsung TV REDO Training Videos on PlusOne

Get Certified!

Samsung's new, 2012 TV REDO Training videos are now available on PlusOne. The training consists of eight new videos designed to assist you with repairs along with an accompanying Certification Exam.

Access the videos by signing on to Plus One, clicking Training/Electronics/On Demand, and then selecting 2012 Samsung TV REDO Training. This will take you to the eight Training Videos listed below. After watching all the videos, be sure to click Exam/Assessment, and then select and take the 2012 Samsung TV REDO Training Exam to receive credit and certification.


SAMSUNG
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CHARLES RUSSO - RUSSA06272938
Home
Bulletins
Newsletters
Training
Electronics
On-Demand
Appliances
Office
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Tech Tips
How To's
Account Profile
Sign Out
Consumer Electronics On-Demand Training
Available On-Demand Training Courses:
Samsung Training is now making available On-Demand Training Courses in various formats including interactive video training, flash files, and downloadable documents you can review at your convenience. Click on the appropriate course training link to access the selected training and once completed click on the Exam/Assessment link to complete your certification.
On-Line Exams & Assessments:
CLICK HERE FOR ACCESSING ON-LINE EXAMS/ASSESSMENTS
Available Courses:
2012 Samsung TV Training
2012 Samsung TV Features, Network & 3D Course (Video - Released 4.30.2012)
2012 Samsung TV and Panel Certification Course (Video - Released 4.30.2012)
Samsung PDP Power-On Sequence and Logic Board Test Video (Video - Released 03.30.2012)
2012 Samsung TV REDO Training
2012 Samsung TV REDO Training (Video - Released 11.2.2012)
2012 Samsung Soft Skills Training

Courses Available:

2012 TV REDO 3D Troubleshooting (Video - Released 11.2.2012)

2012 TV REDO Bluetooth Troubleshooting (Video - Released 11.2.2012)

2012 TV REDO Testing the Function Board (Video - Released 11.2.2012)

2012 TV REDO Troubleshooting LED/LCD Video Noise (Video - Released 11.2.2012)

2012 TV REDO Network Testing and Troubleshooting (Video - Released 11.2.2012)

2012 TV REDO Troubleshooting Plasma Video Noise (Video - Released 11.2.2012)

2012 TV REDO Setting Option Bytes (Video - Released 11.2.2012)

Samsung TV Bluetooth Troubleshooting

Khaled Abuali, *Assistant Manager, Product Support Engineering Group*
Paul Kim, *Manager, Product Support Engineering Group*

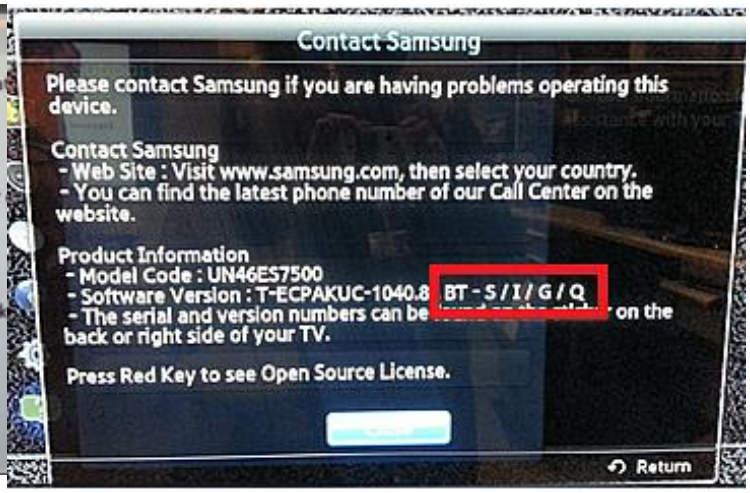
Bluetooth wireless technology, widely used in PCs and Smart phones, is also used in Samsung Smart TV 3D glasses, QWERTY remotes, Smart Control remotes, and wireless keyboards.

Troubleshooting TV - Bluetooth Pairing

1. Check the Bluetooth pairing history.

If a Bluetooth device is not working, first review the Bluetooth pairing history of the device. On the TV, go to Menu→ Support→ Contact Samsung.

If the Bluetooth device (3D glasses, Qwerty Remote, Smart control remote, or IR Blaster) ever paired with the TV, the pairing history, indicated by various letters (Q, G, S, I) displayed after the letters “BT” will appear on this screen as shown below:

Contact Samsung screen on 2011 TV	Contact Samsung screen on 2012 TV
	
Ex) BT-Q/G: QWERTY remote / 3D Glasses were paired	Ex) BT-S/I/G/Q: Smart control/IR Blaster/3D Glasses/QWERTY Remote were paired

Contact Samsung
Please contact Samsung if you are having problems operating this device.
Contact Samsung
- Web Site : Visit www.samsung.com, then select your country.
- You can find the latest phone number of our Call Center on the website.
Product Information
- Model Code : UN46ES7500
- Software Version : T-ECPAKUC-1040.8 BT-S/I/G/Q
- The serial and version numbers can be on the back or right side of your TV.
Press Red Key to see Open Source License.
Return

A positive pairing history shows that the Bluetooth device was working. Replacing the batteries in the Bluetooth device will most likely get it working again.

2. Verify the Bluetooth signal using your Smartphone.

To verify that the TV broadcasts a Bluetooth signal, use your Smartphone.

In the Smartphone's Menu, go to: Settings → Bluetooth: ON → Scan.

You should be able to find either ‘DTVBluetooth’ or ‘TVBluetooth’ in your list of available devices.

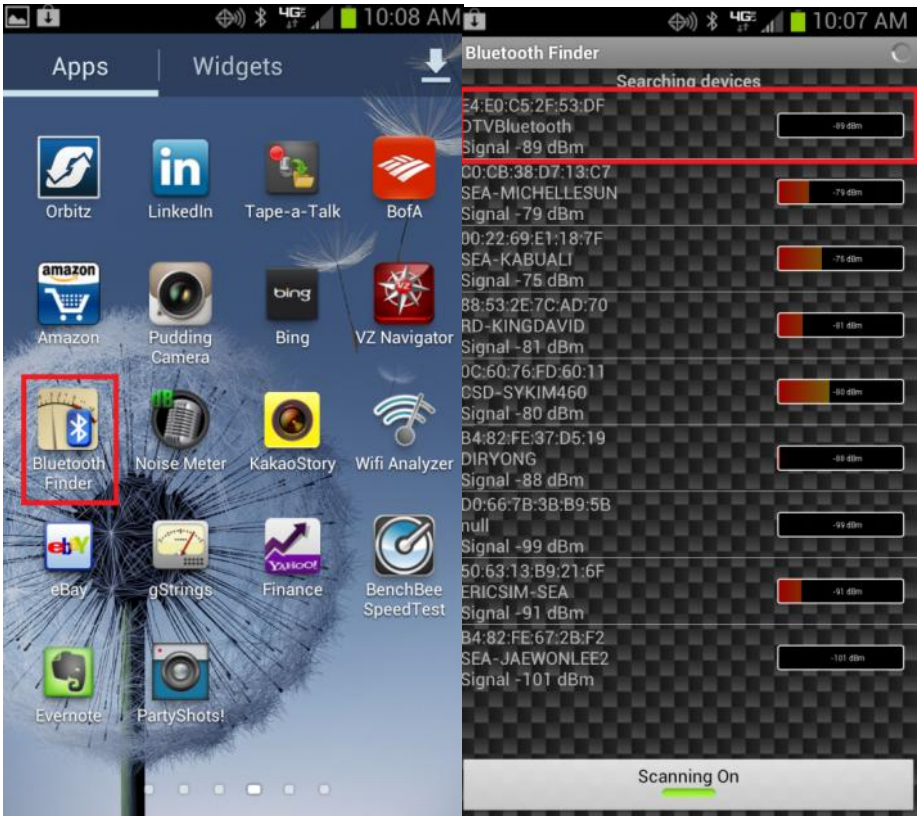
Alternately, using the Android app, Bluetooth Finder, you should see either DTVBluetooth or TVBluetooth in the app’s list of available devices. See the illustrations on the next page.

Samsung TV Bluetooth Troubleshooting

continued

Settings Screen—Bluetooth

Android App: Bluetooth Finder Screen



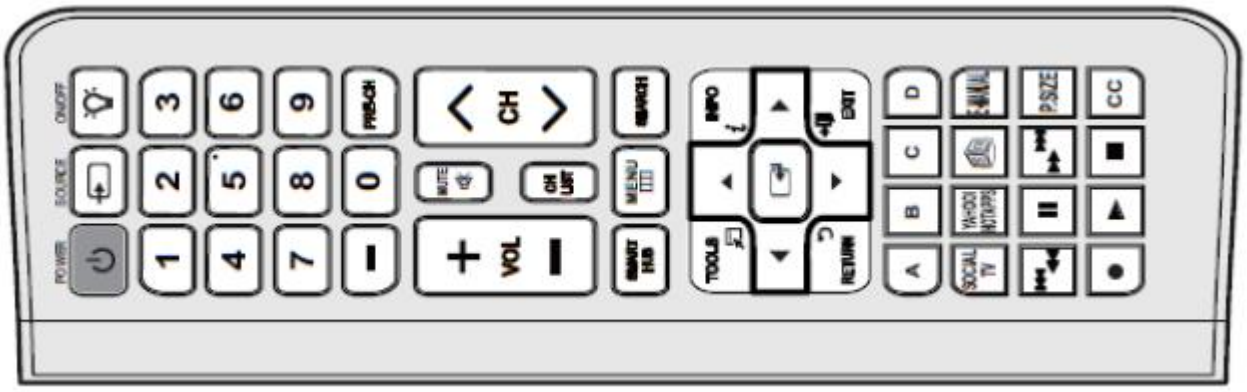
If you can't see the TV in the Bluetooth device list, the Bluetooth module in the TV may be defective.

Troubleshooting the QWERTY Remote

Bluetooth QWERTY Side of the Remote

Samsung TV Bluetooth Troubleshooting

continued



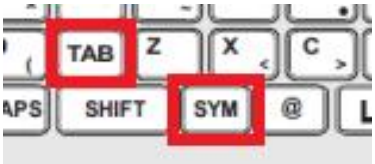
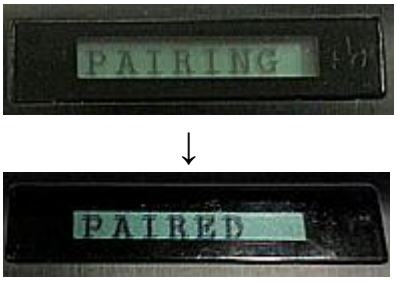
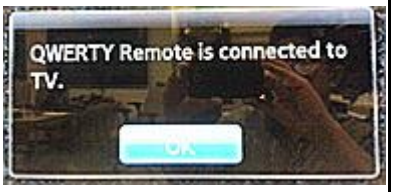
IR Side of the Remote

1. Reset the QWERTY Remote and then pair it with the TV again.

If the QWERTY remote is not working, try resetting it, and then pairing it again with the TV. To reset, press and hold the 'Back Space' and '@' buttons at the same time for 5 seconds. The illustrations below show you what you should see on the QWERTY remotes LCD screen during a reset.

Press and hold 'Back Space' and '@' buttons	→	"Reset OK" appears on QWERTY LCD screen.	→	"Need Pairing" appears on the LCD screen.

To pair, place the remote close to the TV, and then press and hold the 'TAB' and 'SYM' buttons at the same time for 5 seconds. The illustrations below show you what you should see on the QWERTY screen and on the TV screen.

Press and hold 'TAB' and 'SYN' buttons	→	"PAIRING" to "PAIRED" on the QWERTY LCD screen	→	Popup message on the bottom left of the TV screen
				

Samsung TV Bluetooth Troubleshooting

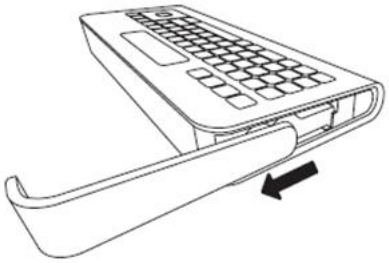
continued

Resolution: Replace the batteries.

Note: The Bluetooth QWERTY Keyboard side of the remote uses a Bluetooth signal and the regular remote side uses an IR signal. The QWERTY side has an LCD Screen and an OFN sensor as a pointer which requires more voltage than the regular Remote side. If the battery's voltage is low, the QWERTY side may not work even though the regular remote side works properly.

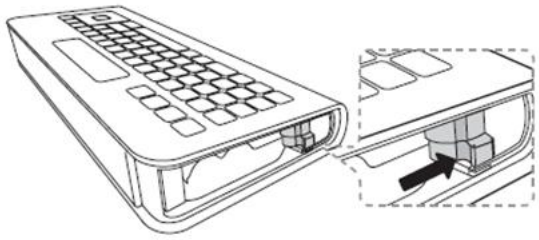
To change the batteries, follow these steps:

1



- Slide out the battery cover.

2

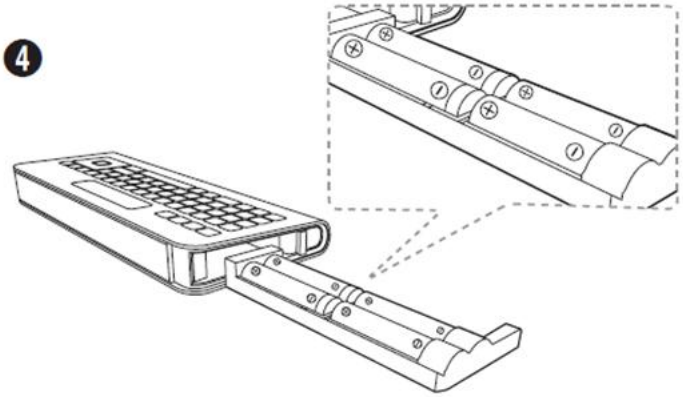


- Push the button right.

3

- Pull the battery tray out.

4



- Insert 4 AAA batter ies in the tray, insert the battery tray into the QWERTY Remote and put the cover back on.

Samsung TV Bluetooth Troubleshooting

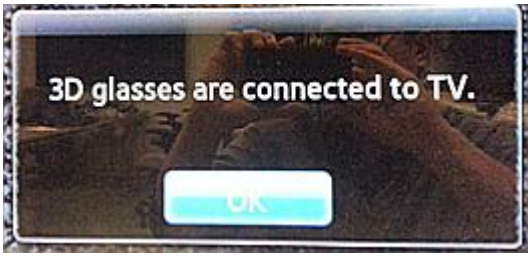
continued

Troubleshooting 3D Glasses

Battery Type: 2012, SSG-4100GB

[Rechargeable Type: 2012, SSG-3550CR

If the 3D glasses are not working, try pairing the glasses with the TV again. To pair, place the 3D glasses close to the TV. Press and hold the 'Pairing/Power' button for 3 seconds. You should see the Green and Red LEDs blink alternately for 3 seconds if the 3D glasses are working properly. The "3D glasses are connected to TV" message should also appear on the bottom left of the TV screen.

Step#1		Step#2
[Battery Type 3D Glasses] [Rechargeable Type 3D Glasses]	→	 [Popup Message displayed on the bottom left of the TV screen]

Notes:

- If the Green and Red LEDs fail to blink or only the RED LED blinks when you try to pair, replace or charge the battery.
- Make sure that customer has Bluetooth compatible 3D glasses. 2010 3D glasses are only IR compatible.
- Once the 3D glasses are paired with the TV, they will operate only when the TV displays 3D contents.
- To verify proper 3D operation, use the 2D to 3D function or use the 3D Explorer application in SmartHub.

T-Shooting D7000 Series LED TV Power supply and Backlight Failures

Chuck Russo

Assistant Manager, Training

Troubleshooting the Samsung D7000 LED Series TVs has been a challenge for many techs, especially when trying to determine whether a problem is caused by the Power Supply, a Panel LED Backlight failure, or a Main Board failure. This has led to delays in repair, incorrect board and panel replacements, and REDO.

In this article, we will examine the D7000 start up sequence, the operation of the SMPS Power Supply and the Panel LED Backlights with its unique processing sequence, and discuss important troubleshooting steps.

The Power On Sequence:

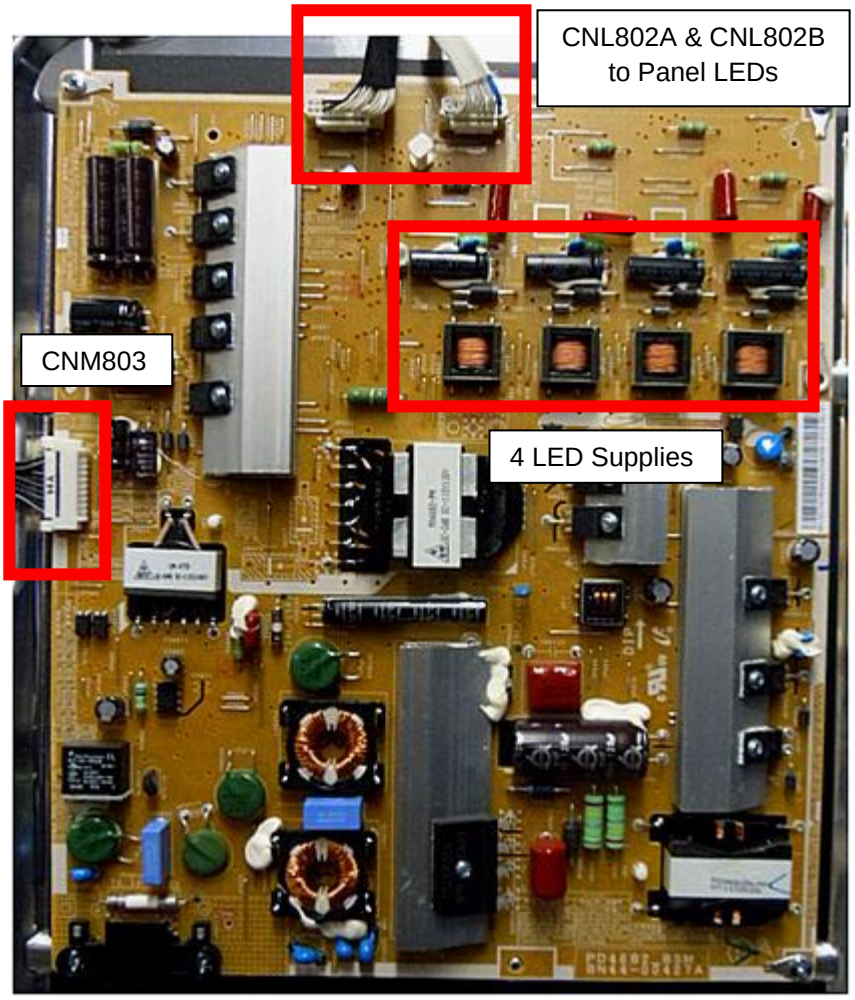
To test the Power On sequence, follow these steps:

1. Locate the Power Connectors on the SMPS Power Supply. In this example, that's CNM803 to the Main Board and CNL802A and CNL802B to the Panel's LED Backlights. Their pin designations should also be printed and visible on the board.
2. With the TV in Powered Standby Mode, verify Power Standby "A5V" voltage on the Power Supply's CNM803 - pin 18 in this example. The "A" signifies "Always On".

   It should read approx 5.3V with respect to chassis ground, supplying important standby voltage to the Main Board.
3. Activate Power On while observing the Power on/off command from the Main Board, pin 20 on the same connector. It should change from approx 0V to 3.3VDC with Power On.

   All the switched voltage supplies, usually designated with a "B", will be turned on. This is a good time to quickly check those voltages. In this example, check B13VDC on pins 7 and 9 and B5VDC on pins 17 and 19 on CNM803.
4. Locate the Back Light On, BLU ON/OFF command coming from the Main Board, Pin 12 CNM803. It should change from approx 0V to approx 5VDV after a short delay of around 1 second from Power On, activating the back lights. The Samsung Smart TV Logo should then appear on screen for a few seconds, and then the TV displays the source selected.

   The backlights will momentarily turn back off after the Boot Logo is displayed and then back



D7000 SMPS Power Supply

T-Shooting D7000 Series LED TVs Power supply and Backlight Failures

continued

on with the input video displayed. This can be observed on the multi meter BLU on/off and through the rear of the panel and the front screen display.

5. Four P-DIM Control Signals, P-DIM 1 thru P-DIM 4, are sent to the Power Supply from the Main Board controlling independent sets of LED Backlights to the panel. They are TTL type control signals that can be tested with a standard multi meter.

   To verify these signals are working correctly, activate the TV's menu and select Back Light from the Picture Menu.

6. Check the voltage at P-DIM 1 (With respect to chassis ground) while changing the Backlight Menu from the 0 minimum thru 20 max setting. The voltage should change from approx. 0.2V min to 3.3V at max Backlight setting. You can repeat the test for P-DIM2 thru P-DIM4. This verifies the operation of the Main Board Back Light control circuit.

Back Light Power Supply Operation and Testing

The LED D7000 Power supply consists of 4 independent supplies. One supply for each of the four sets of LEDs. The DC Operating Voltage can be checked at the four Electrolytic capacitors C9110, C9210, C9310 & C9410 in this example.

The voltage at each capacitor will be approximately 150V for 46 inch D7000 models. This is based on the number of LEDs used in each set. The larger the size TV, the more LEDs required and the higher the voltage supplied.

Now carefully check the voltage at each capacitor's plus side. They should each read approx the same voltage (149VDC in this example), verifying that each of the four backlight supplies are OK.

Back Light LED Configuration

The SMPS Power Supply Board outputs the Back Light Drive voltages at CNL802B to the right half Panel LEDs, R1 thru R8, and at CNL802A to the left half Panel LEDs, L1 through L8.

The left and right side Panel LEDs are combined at the power supply and grouped into four distinct sets of LEDs to allow separate top to bottom backlight Screen control. See Figure 1.

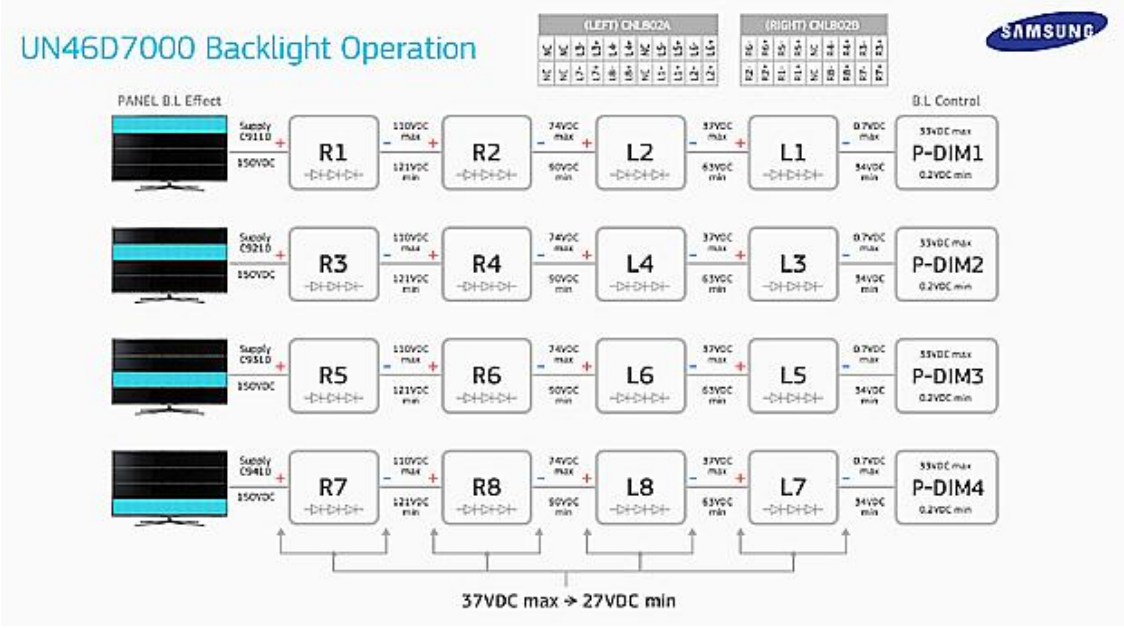


Figure 1: UN46D7000 LED Backlight Configuration. All voltages listed are approximate readings.

T-Shooting D7000 Series LED TVs Power supply and Backlight Failures

continued

- The R1 set of LEDs are connected in series with R2, L2, and L1, and are Edge Positioned in the Panel to light across the Top Quarter of the Screen.
- The R3 set of LEDs are connected in series with R4, L4, and L3, and are Edge Positioned in the Panel to light the 2nd Quarter of the Screen.
- R5 LEDs are connected in series with R6, L6, and L5, and are Edge positioned to light the 3rd Quarter of the screen.
- R7 LEDs are connected in series with R8, L8, and L7, and are Edge positioned to light the bottom quarter of the screen.

Since Right Side LEDs and Left side LEDs are connected in series, disconnecting either CNL802A or B will open each string of LEDs and create a no Back Light condition.

Looking at the Drive Voltages in each string:

The four Backlight DC Supply Voltages, approx 150V each, connect directly to the beginning of each of the four string sets of LEDs at R1+, R3+, R5+, and R7+ (Figure 1, left side).

The four P-DIM Control signals from the Main Board are processed by the Power Supply and produce important Back Light Control Voltages for each return line: L1-, L3-, L5-, and L7- located at the end of each string set of LEDs (Figure 1, right side).

The 150 VDC Supply voltages will remain constant while the Backlight control voltages will vary from approximately 0.7V at the maximum Backlight setting to approx 34V at the minimum Backlight setting. This can be observed by adjusting Backlight from 20 thru 0 in the on screen menu setting.

The voltages across each individual string of LEDs will also vary from approx **37VDC** to 27VDC with the Max to Min Backlight changes as shown on the bottom of the Figure 1 diagram. The corresponding voltage changes at each junction, with reference to chassis ground, are also shown and can be verified at the CNL802A and CNL802B panel connectors.

Testing the SMPS and Backlight Operation with No Main Board Connection

It's important to understand that disconnecting the Power Supply line to the Main Board and plugging in the AC Power Cord turns on the Power Supply circuits but does not light the Backlights in this model. Follow these steps to test the SMPS and Backlights:

1. With the AC Power Cord removed, disconnect the Power Supply Cable to the Main Board at the Main Board end.
2. Connect the AC Power Cord. This will turn on the SMPS Power Supply, but, because all four P-DIM Control Signals are at approximately 0V, there will be no Backlight LEDs lighting.
3. Check the four SMPS Backlight Power Supply Voltages at the four Electrolytic Capacitors: C9010, C9210, C9310 and 9410. They will have changed from 150VDC, the normal supply operation, to approx 95V VDC. The voltages may also begin fluctuating at each supply between 50-85VDC with the supply cycling on and off. This is also a normal possibility in this condition.
4. Check the four backlight strings one at a time. Using an external wire jumper, locate and connect A5V to the P-DIM 1 control pins found on CNM803. This will light the left and right LEDs responsible for the top quarter of the screen.

T-Shooting D7000 Series LED TVs Power supply and Backlight Failures

continued

The particular responsible supply, C9110 in this case, will jump from 95V to the normal 150VDC while the other three remain at approx 95V.

The SMPS supply may remain stable enough to simply light the responsible LEDs. However, the power supply error detection circuit may shut off the responsible supply just as it reaches near 150VDC, turn it back on, and then repeat the cycle causing the LED Back Lights to also cycle on and off and repeat indefinitely. This does not prevent the backlights and supply from being tested.

5. Connect A5V to the P-DIM 2 control pins on CNM803.The responsible Left and Right LEDs will now light the 2nd quarter row of the screen. Its responsible supply will also jump from approx 95VDC to approx 150VDC normal operation.
6. Connect A5V to P-DIM3 and observe the 3rd quarter of the screen for proper LED and SMPS operation.
7. Finally, connect A5V to P-DIM4 and observe the bottom quarter of the screen for proper LED and SMPS operation.

Example: Troubleshooting a Particular Failure

SYMPTOM:

The TV turns on with seemingly normal looking video of the Boot Logo for approximately 2 seconds, and then turns off. It remains off for approx 2 second and cycles back on with Boot Logo for about 2 seconds again with good video. This process continues cycling over and over again. The relay on the power supply can also be heard clicking on and off during this time.

The Video may advance further to display the input video in addition to the Boot Logo during testing while it continues to cycle on and off indefinitely.

REPAIR INVESTIGATION:

1. Measuring the four Backlight Power Supplies at each capacitor (C9110, C9210, C9310, and C9410) reveals that 3 of them rise to approximately their normal supply voltage of 150V before dropping with the power cycle off, while the other supply, output at C9210 in this example, rises to over 290VDC before dropping with power cycle off.

   OBSERVATION: This condition indicates that there is either a SMPS failure or an LED (Panel) open load failure condition. The supply is likely cycling on/off due to an Over Voltage detection condition. This can be verified by isolating the SMPS from the Main Board.

2. Removing the power supply connection to the Main Board and connecting A5V to P-DIM1 correctly lights L/R LEDs responsible for the top ¼ of the screen, even though in some cases it may power cycle on and off as in this example. Connecting A5V to P-DIM2, however, does not light the next quarter of the screen. Connecting A5V to P-DIM3 correctly lights the next quarter of the screen. Connecting A5V to P-DIM4 correctly lights the bottom ¼ of the screen.

   OBSERVATION: Failure of the second quarter of the screen is obvious. The failure may point to either an open set of LEDs, in particular R3, R4, L4, and L3, on the Panel, or a possible Power Supply failure.

T-Shooting D7000 Series LED TVs Power supply and Backlight Failures

continued

3. With the power supply connection to the Main Board still removed, each of the four Backlight supplies now measures approx 95VDC, which may fluctuate between 50VDC and 85VDC while powering on/off for circuit protection. Measuring the voltages at the suspected string set of LEDs reveals a normal 50VDC – 85VDC fluctuation at input R3+ but an improper 0V reading at each of the remaining R4, L4 and L3 pins located on CNL802A and CNL802B.

   CONCLUSION: Confirmation of a properly operating SMPS Power Supply and open string set of LEDs is confirmed, since an open series set of LEDs would break the circuit and prevent normal voltage readings at R4, L4, and L3.

REPAIR ACTION: The SMPS is OK. Replace the defective Panel.

Key Points to Remember

- ✓ D7000 Samsung LED TVs have four distinct Backlight supplies within the SMPS that control 4 separate sets of LEDs.
- ✓ Backlight supplies can be checked by comparing voltages at their related Electrolytic Capacitors on the SMPS Board.
- ✓ The Main Board controls the 4 separate sets of LEDs with P-DIM1 through P-DIM4.
- ✓ When the Power Supply connection to the Main Board is removed, all the SMPS Supplies will turn on but the Backlight LEDs will not light.
- ✓ Each set of LEDs can be individually tested by supplying A5V to P-DIM1 through P-DIM4, lighting the combined Left/Right Panel LEDs one quarter at a time top to bottom and across the screen.
- ✓ Removing CNL802A or CNL802B, the Left and right side sets of LED, will create a no backlight condition since they are connected in series.
- ✓ Checking Voltages at the four individual supplies and CNL802A or CNL802B can determine a defective set of panel Back Light LEDs or a defective SMPS Power Supply.

CONCLUSION: Troubleshooting the more complex D7000 series and similar Samsung model LED TVs can be simplified with a step by step approach which isolates the problem while preventing the use of unnecessary replacement parts and REDO.

2012 TVs: Ordering the Correct Jog control assembly

Khaled Abuali
Assistant Manager, Product Support Engineering Group

In some of 2012 TV models, the Bluetooth or Wi-Fi module is integrated into the Jog control assembly. Please refer to the set version before ordering these parts.

Jog + Wi-Fi Module

Jog + BT Module

The chart below lists models and versions in which the Bluetooth or Wi-Fi module is integrated into the Jog control. If a model or version is not listed in the chart, this means that the Bluetooth and Wi-Fi modules are available as separate modules.

Note: Please call GPCA at 800-634-8276 if you encounter any problems when ordering any of these parts.

MODEL_CODE	VER	PART_NUMBER	PARTDESC	Material
PN51E7000FFXZA	1	BN96-23843B	ASSY BOARD P-FUNCTION & IR	Jog + BT
PN51E7000FFXZA	2	BN96-23843B	ASSY BOARD P-FUNCTION & IR	Jog + BT
PN51E8000GFXZA	1	BN96-23843B	ASSY BOARD P-FUNCTION & IR	Jog + BT
PN51E8000GFXZA	2	BN96-23843B	ASSY BOARD P-FUNCTION & IR	Jog + BT
PN60E7000FFXZA	1	BN96-23843C	ASSY BOARD P-FUNCTION & IR	Jog + BT
PN60E7000FFXZA	2	BN96-23843C	ASSY BOARD P-FUNCTION & IR	Jog + BT
PN60E8000GFXZA	1	BN96-23843C	ASSY BOARD P-FUNCTION & IR	Jog + BT
PN60E8000GFXZA	2	BN96-23843C	ASSY BOARD P-FUNCTION & IR	Jog + BT
UN32EH5300FXZA	1	BN96-22413P	ASSY BOARD P-JOG SWITCH & IR	Jog + Wi-Fi
UN32ES6500FXZA	1	BN96-23622K	ASSY BOARD P-5WAY SWITCH FUNCTION	Jog + BT
UN40EH5300FXZA	1	BN96-22413Q	ASSY BOARD P-JOG SWITCH & IR	Jog + Wi-Fi
UN40EH5300FXZA	2	BN96-22413Q	ASSY BOARD P-JOG SWITCH & IR	Jog + Wi-Fi

2012 TVs: Ordering the Correct Jog control assembly

continued

MODEL_CODE	VER	PART_NUMBER	PARTDESC	Material
UN40ES6100FXZA	1	BN96-22457K	ASSY BOARD P-5WAY SWITCH FUNCTION	Jog + BT
UN40ES6150FXZA	1	BN96-22457K	ASSY BOARD P-5WAY SWITCH FUNCTION	Jog + BT
UN40ES6500FXZA	1	BN96-23622B	ASSY BOARD P-5WAY SWITCH FUNCTION	Jog + BT
UN40ES6580FXZA	1	BN96-22457E	ASSY BOARD P-5WAY SWITCH FUNCTION	Jog + BT
UN46EH5300FXZA	1	BN96-22413R	ASSY BOARD P-JOG SWITCH & IR	Jog + Wi-Fi
UN46EH5300FXZA	2	BN96-22413R	ASSY BOARD P-JOG SWITCH & IR	Jog + Wi-Fi
UN46EH6030FXZA	1	BN96-23838D	ASSY BOARD P-JOG SWITCH & IR	Jog + BT
UN46EH6030FXZA	2	BN96-23838D	ASSY BOARD P-JOG SWITCH & IR	Jog + BT
UN46EH6070FXZA	1	BN96-23838D	ASSY BOARD P-JOG SWITCH & IR	Jog + BT
UN46ES6100FXZA	1	BN96-22457L	ASSY BOARD P-5WAY SWITCH FUNCTION	Jog + BT
UN46ES6150FXZA	1	BN96-22457L	ASSY BOARD P-5WAY SWITCH FUNCTION	Jog + BT
UN46ES6500FXZA	1	BN96-23622C	ASSY BOARD P-5WAY SWITCH FUNCTION	Jog + BT
UN46ES6580FXZA	1	BN96-22457C	ASSY BOARD P-5WAY SWITCH FUNCTION	Jog + BT
UN46ES6600FXZA	1	BN96-22457C	ASSY BOARD P-5WAY SWITCH FUNCTION	Jog + BT
UN46ES7100FXZA	2	BN96-23622H	ASSY BOARD P-5WAY SWITCH FUNCTION	Jog + BT
UN50EH5300FXZA	1	BN96-22413M	ASSY BOARD P-JOG SWITCH & IR	Jog + Wi-Fi
UN50ES6100FXZA	1	BN96-22457M	ASSY BOARD P-5WAY SWITCH FUNCTION	Jog + BT
UN50ES6150FXZA	1	BN96-22457M	ASSY BOARD P-5WAY SWITCH FUNCTION	Jog + BT
UN50ES6500FXZA	1	BN96-23622C	ASSY BOARD P-5WAY SWITCH FUNCTION	Jog + BT
UN50ES6580FXZA	1	BN96-23622C	ASSY BOARD P-5WAY SWITCH FUNCTION	Jog + BT
UN50ES6900FXZA	1	BN96-23622F	ASSY BOARD P-5WAY SWITCH FUNCTION	Jog + BT
UN55EH6070FXZA	1	BN96-23838E	ASSY BOARD P-JOG SWITCH & IR	Jog + BT
UN55ES6100FXZA	1	BN96-22457L	ASSY BOARD P-5WAY SWITCH FUNCTION	Jog + BT
UN55ES6150FXZA	1	BN96-22457L	ASSY BOARD P-5WAY SWITCH FUNCTION	Jog + BT
UN55ES6500FXZA	1	BN96-23622C	ASSY BOARD P-5WAY SWITCH FUNCTION	Jog + BT
UN55ES6500FXZA	2	BN96-23622C	ASSY BOARD P-5WAY SWITCH FUNCTION	Jog + BT
UN55ES6550FXZA	1	BN96-23622C	ASSY BOARD P-5WAY SWITCH FUNCTION	Jog + BT
UN55ES6550FXZA	2	BN96-23622C	ASSY BOARD P-5WAY SWITCH FUNCTION	Jog + BT
UN55ES6580FXZA	1	BN96-22457C	ASSY BOARD P-5WAY SWITCH FUNCTION	Jog + BT
UN55ES6580FXZA	2	BN96-22457C	ASSY BOARD P-5WAY SWITCH FUNCTION	Jog + BT
UN55ES6600FXZA	1	BN96-22457C	ASSY BOARD P-5WAY SWITCH FUNCTION	Jog + BT
UN55ES6600FXZA	2	BN96-22457C	ASSY BOARD P-5WAY SWITCH FUNCTION	Jog + BT
UN55ES6900FXZA	1	BN96-23622G	ASSY BOARD P-5WAY SWITCH FUNCTION	Jog + BT
UN55ES7100FXZA	2	BN96-23622J	ASSY BOARD P-5WAY SWITCH FUNCTION	Jog + BT

2012 TVs: Ordering the Correct Jog control assembly

continued

MODEL_CODE	VER	PART_NUMBER	PARTDESC	Material
UN55ES7150FXZA	2	BN96-23622J	ASSY BOARD P-5WAY SWITCH FUNCTION	Jog + BT
UN60ES6100FXZA	1	BN96-22457L	ASSY BOARD P-5WAY SWITCH FUNCTION	Jog + BT
UN60ES6500FXZA	1	BN96-23622C	ASSY BOARD P-5WAY SWITCH FUNCTION	Jog + BT
UN60ES7100FXZA	1	BN96-23622L	ASSY BOARD P-5WAY SWITCH FUNCTION	Jog + BT
UN60ES7150FXZA	1	BN96-23622L	ASSY BOARD P-5WAY SWITCH FUNCTION	Jog + BT
UN65ES6500FXZA	1	BN96-23622D	ASSY BOARD P-5WAY SWITCH FUNCTION	Jog + BT
UN65ES6550FXZA	1	BN96-23622D	ASSY BOARD P-5WAY SWITCH FUNCTION	Jog + BT
UN65ES8000FXZA	1	BN96-22726F	ASSY BOARD P	Jog + BT
UN65ES8000FXZA	2	BN96-22726F	ASSY BOARD P	Jog + BT

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The Samsung TV Watchdog (WD) Count

Chuck Russo
Assistant Manager, Training

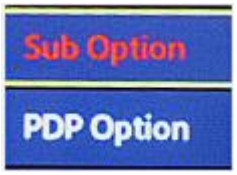
What is Watch Dog Count?

Watchdog Count (WD), found in a TV's Factory Mode, is a count that is triggered by and increases each time an error is detected. The Main Board will add to the count and reset the TV with each WD detection.

The maximum WD count is 255. The WD is triggered by circuit detected errors, detected failures occurring with customer operations (i.e. Smart Hub Operations, apps, Web browsing, etc), or other TV processing or time out operations.

How to View WD

1. Using a Service Remote, place the TV in Factory Mode (Info/Factory).
2. Select Control —>Sub Option —>Watchdog ON/OFF Status. WD Count then appears in the listing



Repair Action

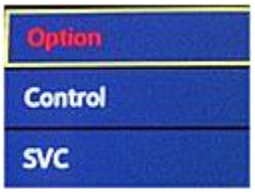
It's not unusual to see a WD count on a TV. It can, however, be an indication that something needs to be addressed, particularly if the WD count is very high. If the WD count on a TV is high:

- Make sure the TV has the latest firmware. Many firmware changes have been made to fix issues. The changes prevent WDs from occurring.
- Check bulletins for any issues or updates that need to performed on the TV.

IMPORTANT: High WD counts are rarely caused by a defective Main Board. Other issues listed are normally the cause. Do not replace the Main Board because of a high WD Count.

How to Reset WD Count:

To reset WD Count, activate reset in Factory mode by selecting Option and then Factory Reset. This, however, will reset all user functions in the TV while resetting the WD count to 0.



NOTE: A TV will still operate with a high WD count, but resetting the WD count after a repair will assist in determining if the WD activation issues were resolved.

The Watchdog "WD" Count

continued

WD ON/OFF

IMPORTANT: It's important to leave Watchdog Count ON (default setting). Turning it off will lock up the TV each time WD is triggered, creating a TV operation issue.

Please Send Us Your Comments!

Something you'd like to see in the Samsung Tech Talk Newsletter? If there a topic/issue we haven't covered that you'd like us to write about, **LET US KNOW!**

Please send your comments to:

training@sea.samsung.com

Product Support: Open Saturdays for You

Jorge Tavora
Product Support Manager

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Hours of Operation :	**10AM ~ 4PM**	**SATURDAY (EST)**
	9AM ~ 9PM	Monday ~ Friday (EST)

Technical Support Telephone lines

To help our authorized service centers provide prompt and expert service, we have an available staff of engineering technicians ready to offer assistance for difficult repairs.

To receive assistance for Appliances (Refrigerators, Washers, Dryers, Dishwashers, M/Ws, etc.):

888-751-4086	- ASC/SSD/NSP repairing Home Appliances
866-894-0637	- ME repairing Home Appliances

To receive assistance for Consumer Electronics (TVs, PDPs, LCDs, LEDs, HTSs, DVDs, DLPs, BDs, etc.):

888-751-4086	- ASC/SSD/NSP - repairing CE
866-894-0637	- FE repairing Consumer Electronics.
201-584-0412	- (FAX) CE and HA Tech Support for Samsung Authorized Service

*Please call the correct telephone number for the specific Account and Product you are working on.

To email us:

LCD TV, LED TV, PDP TV, DLP TV	technicalsupport@sea.samsung.com
Camcorder, VCR, DVD, Home Theater, Audio, MP3	technicalsupport@sea.samsung.com
Direct View TV, TV Combo	technicalsupport@sea.samsung.com
AC, Vacuum Cleaners, Microwave Ovens, Refrigerators, Gas/Electric Range, Dish Washer	technicalsupport@sea.samsung.com
Service manuals (Content issues, assistance)	jimf@sea.samsung.com

*For us to most effectively handle your call, please **be in front of the unit** and have the Ticket and/or Model number, the Serial number, and the product's repair history on hand, and have your test equipment ready for troubleshooting before calling. Remove all covers if needed for voltage/resistance checking.